

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A position control method for controlling a position of an object lens in a direction perpendicular to a tangential direction of a spiral track or of concentric tracks formed on a recording surface of a recording medium without a guide groove, said position control method comprising:

a first step of trying to read a predetermined data recorded on the recording medium;

a second step of determining whether or not the predetermined data is readable; and

a third step of, according to whether or not the predetermined data is readable, switching a criterion for controlling the position of the object lens based on a tracking error signal,

wherein the first step is performed when determining a type of the recording medium,

wherein the third step comprises a step of, if the predetermined data is not readable, switching to a criterion that includes reversing a polarity of the tracking error signal and controlling the position of the object lens based on the reversed-polarity tracking error signal, [[and]]

wherein the predetermined data includes an address data, and

wherein:

a first light source is used when the recording medium is determined to be of a first type, and

a second light source is used when the recording medium is determined to be of a second type.

2. (Canceled)

3. (Original) The position control method as claimed in claim 1, wherein:

the third step comprises a step of:

if the predetermined data is not readable, switching to a criterion that includes shifting an on-track determination position in the tracking error signal by a predetermined amount and controlling the position of the object lens with the tracking error signal, said on-track determination position of the tracking error signal being a position at which it is determined that on-track occurs.

4. (Original) The position control method as claimed in claim 3, wherein:

the predetermined amount equals half of a wavelength of a waveform of the tracking error signal.

5. (Canceled)

6. (Original) The position control method as claimed in claim 1, wherein:

the first step is performed during a seek operation of the object lens.

7. (Canceled)

8. (Original) The position control method as claimed in claim 1, wherein:

the first step is performed when reproducing a data recorded on the recording medium.

9. (Currently Amended) A position control method for controlling a position of an object lens in a direction perpendicular to a tangential direction of a spiral track or of concentric tracks formed on a recording surface of a recording medium having a plurality of guide grooves, said position control method comprising:

a first step of trying to read a predetermined data recorded in the guide grooves or in a region between two of the guide grooves on the recording medium following a criterion for controlling the object lens based on a tracking error signal

with respect to the guide grooves or a tracking error signal with respect to the region between two of the guide grooves;

a second step of determining whether or not the predetermined data is readable; and

a third step of, according to whether or not the predetermined data is readable, switching the criterion and trying again to read the predetermined data recorded in the guide grooves or in the region between two of the guide grooves,

wherein the third step comprises a step of: if the predetermined data is not readable, switching to a criterion that includes reversing a polarity of the tracking error signal and controlling the position of the object lens based on the reversed-polarity tracking error signal,

wherein the predetermined data includes an address data, [[and]]

wherein the first step is performed when determining a type of the recording medium, and

wherein:

a first light source is used when the recording medium is determined to be of a first type, and

a second light source is used when the recording medium is determined to be of a second type.

10. (Canceled)

11. (Original) The position control method as claimed in claim 9, wherein:

the third step comprises a step of:

if the predetermined data is not readable, switching to a criterion that includes shifting an on-track determination position in the tracking error signal by a predetermined amount and controlling the position of the object lens with the tracking error signal, said on-track determination position of the tracking error signal being a position at which it is determined that on-track occurs.

12. (Original) The position control method as claimed in claim 11, wherein:

the predetermined amount equals half of a wavelength of a waveform of the tracking error signal.

13. (Canceled)

14. (Original) The position control method as claimed in claim 9, wherein:

the first step is performed during a seek operation of the object lens.

15. (Canceled)

16. (Original) The position control method as claimed in claim 9, wherein:

the first step is performed when reproducing a data recorded on the recording medium.

17-26. (Canceled)

27. (Currently Amended) A storage medium for storing a program executable on a computer for controlling an optical disk device that emits a light beam on a recording surface of a recording medium without a guide groove and receives light reflected from the recording surface of the recording medium, said program comprising:

a first step of trying to read a predetermined data recorded on the recording medium in response to a control request for controlling a position of an object lens in a direction perpendicular to a tangential direction of a spiral track or of concentric tracks formed on the recording surface of the recording medium;

a second step of determining whether or not the predetermined data is readable; and

a third step of, according to whether or not the predetermined data is readable, switching a criterion for controlling the position of the object lens based on a tracking error signal,

wherein the first step is performed when determining a type of the recording medium,

wherein the third step comprises a step of: if the predetermined data is not readable, switching to a criterion that includes reversing a polarity of the tracking error signal and controlling the position of the object lens based on the reversed-polarity tracking error signal, [[and]]

wherein the predetermined data includes an address data, and

wherein:

a first light source is used when the recording medium is determined to be of a first type, and

a second light source is used when the recording medium is determined to be of a second type.

28. (Currently Amended) A storage medium for storing a program executable on a computer for controlling an optical disk device that emits a light beam on a recording surface of a recording medium having a plurality of guide grooves and receives light reflected from the recording surface of the recording medium, said program comprising:

a first step of, in response to a control request for controlling a position of an object lens in a direction perpendicular to a tangential direction of a spiral track or of concentric tracks formed on the recording surface of the recording medium, trying to read a predetermined data recorded in the guide grooves or in a region between two of the guide grooves on the recording medium following a criterion for controlling the object lens based on a tracking error signal with respect to the guide grooves or a tracking error signal with respect to the region between two of the guide grooves;

a second step of determining whether or not the predetermined data is readable; and

a third step of, according to whether or not the predetermined data is readable, switching the criterion and trying again to read the predetermined data recorded in the guide grooves or in the region between two of the guide grooves,

wherein the first step is performed when determining a type of the recording medium,

wherein the third step comprises a step of: if the predetermined data is not readable, switching to a criterion that includes reversing a polarity of the tracking error signal and controlling the position of the object lens based on the reversed-polarity tracking error signal, [[and]]

wherein the predetermined data includes an address data, and

wherein:

a first light source is used when the recording medium is determined to be of a first type, and

a second light source is used when the recording medium is determined to be of a second type.

29. (Currently Amended) A position control device for controlling a position of an object lens in a direction perpendicular to a tangential direction of a spiral track or of concentric tracks formed on a recording surface of a recording medium without a guide groove, said position control device comprising:

a trial unit configured to try to read a predetermined data recorded on the recording medium, wherein trying to read a predetermined data is performed when determining a type of the recording medium; and

a control unit configured to determine whether or not the predetermined data is readable, and according to whether or not the predetermined data is readable, to switch a criterion for controlling the position of the object lens based on a tracking error signal for control of the position of the object lens,

wherein if the predetermined data is not readable, the control unit switches to a criterion that includes reversing a polarity of the tracking error signal and controlling the position of the object lens based on the reversed-polarity tracking error signal, [[and]]

wherein the predetermined data includes an address data, and

wherein:

a first light source is used when the recording medium is determined to be of a first type, and

a second light source is used when the recording medium is determined to be of a second type.

30. (Canceled)

31. (Original) The position control device as claimed in claim 29, wherein:

if the predetermined data is not readable, the control unit switches to a criterion that includes shifting an on-track determination position in the tracking error signal by a predetermined amount and controlling the position of the object lens with the tracking error signal, said on-track determination position of the tracking error signal being a position at which it is determined that on-track occurs.

32. (Original) The position control device as claimed in claim 31, wherein:

the predetermined amount equals half of a wavelength of a waveform of the tracking error signal.

33. (Canceled)

34. (Currently Amended) A position control device for controlling a position of an object lens in a direction perpendicular to a tangential direction of a spiral track or of concentric tracks formed on a recording surface of a recording medium having a plurality of guide grooves, said position control device comprising:

a trial unit configured to try to read a predetermined data recorded in the guide grooves or in a region between two of the guide grooves on the recording medium following a criterion for controlling the object lens based on a tracking error signal with respect to the guide grooves or the region between two of the guide grooves, wherein trying to read a predetermined data is performed when determining a type of the recording medium; and

a control unit configured to determine whether or not the predetermined data is readable, and according to whether or not the predetermined data is readable, to change the criterion and to try again to read the predetermined data recorded in the guide grooves or in a region between two of the guide grooves,

wherein if the predetermined data is not readable, the control unit switches to a criterion that includes reversing a polarity of the tracking error signal and controlling the position of the object lens based on the reversed-polarity tracking error signal, [[and]]

wherein the predetermined data includes an address data, and

wherein:

a first light source is used when the recording medium is determined to be of a first type, and

a second light source is used when the recording medium is determined to be of a second type.

35. (Canceled)

36. (Original) The position control device as claimed in claim 34, wherein:

if the predetermined data is not readable, the control unit switches to a criterion that includes shifting an on-track determination position in the tracking error signal by a predetermined amount and controlling the position of the object lens with the tracking error signal, said on-track determination position of the tracking error signal being a position at which it is determined that on-track occurs.

37. (Original) The position control device as claimed in claim 36, wherein:

the predetermined amount equals half of a wavelength of a waveform of the tracking error signal.

38. (Canceled)

39. (Currently Amended) An optical disk device for reproducing predetermined data on a recording medium without a guide groove, said optical disk device comprising:

a first light source;

a second light source;

an optical system that includes an object lens for condensing a light beam from a selected one of the first and second light sources ~~source~~ to a recording surface of the recording medium and directs a light beam reflected from the recording surface to a predetermined light reception position, the first and second light source being selected depending on a determined type of the recording medium;

a light detection unit arranged at the light reception position;

a position control device for controlling a position of the object lens in a direction perpendicular to a tangential direction of a spiral track or of concentric tracks formed on the recording surface of the recording medium; and

a processing unit configured to perform reproducing the predetermined data on a recording medium,

wherein said position control device comprises:

a trial unit configured to try to read a predetermined data recorded on the recording medium, wherein trying to read a predetermined data is performed when determining a type of the recording medium; and

a control unit configured to determine whether or not the predetermined data is readable, and according to whether or not the predetermined data is readable, to switch a criterion for controlling the position of the object lens based on a tracking error signal for control of the position of the object lens,

wherein if the predetermined data is not readable, the control unit switches to a criterion that includes reversing a polarity of the tracking error signal and controlling the position of the object lens based on the reversed-polarity tracking error signal, and

wherein the predetermined data includes an address data.

40. (Currently Amended) An optical disk device for reproducing predetermined data on a recording medium having a plurality of guide grooves, said optical disk device comprising:

a first light source;

a second light source;

an optical system that includes an object lens for condensing a light beam from a selected one of the first and second light sources ~~source~~ to a recording surface of the recording medium and directs a light beam reflected from the

recording surface to a predetermined light reception position, the first and second light source being selected depending on a determined type of the recording medium;

a light detection unit arranged at the light reception position;

a position control device for controlling a position of the object lens in a direction perpendicular to a tangential direction of a spiral track or of concentric tracks formed on the recording surface of the recording medium; and

a processing unit configured to perform reproducing the predetermined data on a recording medium,

wherein said position control device comprises:

a trial unit configured to try to read a predetermined data recorded in the guide grooves or in a region between two of the guide grooves on the recording medium following a criterion for controlling the object lens based on a tracking error signal with respect to the guide grooves or the region between two of the guide grooves, wherein trying to read a predetermined data is performed when determining a type of the recording medium; and

a control unit configured to determine whether or not the predetermined data is readable, and according to whether or not the predetermined data is readable, to change the criterion and to try again to read the predetermined data recorded in the guide grooves or in a region between two of the guide grooves,

wherein if the predetermined data is not readable, the control unit switches to a criterion that includes reversing a polarity of the tracking error signal and controlling the position of the object lens based on the reversed-polarity tracking error signal, and

wherein the predetermined data includes an address data.

41. (New) The position control method as claimed in claim 1, wherein, if it is determined that the recording medium is a DVD, the tracking error signal is detected using a differential push-pull method.

42. (New) The position control method as claimed in claim 1, wherein the tracking error control signal is based on a vertical distance of the object lens from the recording medium.